

R317. Environmental Quality, Water Quality.

R317-4. Onsite Wastewater Systems.

R317-4-3. Onsite Wastewater Systems General Requirements.

3.1. Units Required in an Onsite Wastewater System. The onsite wastewater system shall consist of the following components:

A. A building sewer.

B. A septic tank.

C. An absorption system. This may be a standard trench, a shallow trench with capping fill, a chambered trench, a deep wall trench, a seepage pit or pits, an absorption bed, or alternative or experimental systems as specified in this rule, depending on location, topography, soil conditions and ground water table.

3.2. Multiple Dwelling Units. Multiple dwelling units under individual ownership, except condominiums, shall not be served by a single onsite wastewater system except where that system is under the sponsorship of a body politic. Plans and specifications for such systems shall be submitted to and approved by the Utah Water Quality Board. Issuance of a construction permit by the Board shall constitute approval of plans and authorization for construction.

3.3. Review Criteria for Establishing Onsite Wastewater System Feasibility of Proposed Housing Subdivisions and Other Similar Developments. The local health department will review plans for proposed subdivisions and other similar developments for wastewater permit feasibility, prepared at the owner's expense by or under the supervision of a qualified person such as, a licensed environmental health scientist, or a registered civil, environmental or geotechnical engineer, certified by the regulatory authority. A plan of the subdivision shall be submitted to the local health department for review and shall be drawn to such scale as needed to show essential features. Ground surface contours must be included, preferably at two-foot intervals unless smaller intervals are necessary to describe existing surface conditions. Intervals larger than two feet may be authorized on a case-by-case basis where it can be shown that they are adequate to describe all necessary terrain features. The plan must be specifically located with respect to the public land survey of Utah. A vicinity location map, preferably a U.S. Geological Survey 7-1/2 or 15 minute topographic map, shall be provided with the plan for ease in locating the subdivision area. A narrative feasibility report addressing the short-range and long-range water supply and wastewater system facilities proposed to serve the development must be submitted for review. The feasibility report shall include the following information:

A. Name and location of proposed development.

B. Name and address of the developer of the proposed project and the engineer or individual who submitted the feasibility report.

C. Statement of intended use of proposed development, such as residential-single family, multiple dwellings, commercial,

industrial, or agricultural.

D. The proposed street and lot layout, the size and dimensions of each lot and the location of all water lines and easements, and if possible, the areas proposed for sewage disposal. All lots shall be consecutively numbered. The minimum required area of each lot shall be sufficient to permit the safe and effective use of an onsite wastewater system and shall include a replacement area for the absorption system. Plans used for multiple dwellings, commercial, and industrial purposes will require a study of anticipated sewage flows prior to developing suitable area requirements for sewage disposal.

E. Ground surface slope of areas proposed for onsite wastewater systems shall conform with the requirements of R317-4-4.

F. The location, type, and depth of all existing and proposed nonpublic water supply sources within 200 feet of onsite wastewater systems, and of all existing or proposed public water supply sources within 1500 feet of onsite wastewater systems.

G. The locations of all rivers, streams, creeks, washes (dry or ephemeral), lakes, canals, marshes, subsurface drains, natural storm water drains, lagoons, artificial impoundments, either existing or proposed, within or adjacent to the area to be planned, and cutting or filling of lots that will affect building sites. Areas proposed for onsite wastewater systems shall be isolated from pertinent ground features as specified in Table 2.

H. Surface drainage systems shall be included on the plan, as naturally occurring, and as altered by roadways or any drainage, grading or improvement, installed or proposed by the developer. The details of the surface drainage system shall show that the surface drainage structures, whether ditches, pipes, or culverts, will be adequate to handle all surface drainage so that it in no way will affect onsite wastewater systems on the property. Details shall also be provided for the final disposal of surface runoff from the property.

I. If any part of a subdivision lies within or abuts a flood plain area, the flood plain shall be shown within a contour line and shall be clearly labeled on the plan with the words "flood plain area".

J. The location of all soil exploration pits and percolation test holes shall be clearly identified on the subdivision final plat and identified by a key number or letter designation. The results of such soil tests, including stratified depths of soils and final percolation rates for each lot shall be recorded on or with the final plat. All soil tests shall be conducted at the owner's expense.

K. A report by an engineer, geologist, or other person qualified by training and experience to prepare such reports must be submitted to show a comprehensive log of soil conditions for each lot proposed for an onsite wastewater system.

1. A sufficient number of soil exploration pits shall be dug

on the property to provide an accurate description of subsurface soil conditions. Soil description shall conform with the United States Department of Agriculture soil classification system. Soil exploration pits shall be of sufficient size to permit visual inspection, and to a minimum depth of ten feet, and at least four feet below the bottom of proposed absorption systems. One end of each pit should be sloped gently to permit easy entry if necessary. Deeper soil exploration pits are required if deep absorption systems, such as deep wall trenches or seepage pits, are proposed.

2. For each soil exploration pit, a log of the subsurface formations encountered must be submitted for review which describes the texture, structure, and depth of each soil type, the depth of the ground water table if encountered, and any indications of the maximum ground water table.

3. Soil exploration pits and percolation tests shall be made at the rate of at least one test per lot. The local health department may allow fewer tests based on the uniformity of prevailing soil and ground water characteristics and available percolation test data. Percolation tests shall be conducted in accordance with R317-4-5. If soil conditions and surface topography indicate, a greater number of soil exploration pits or percolation tests may be required by the regulatory authority. Whenever available, information from published soil studies of the area of the proposed subdivision shall be submitted for review. Soil exploration pits and percolation tests must be conducted as closely as possible to the absorption system sites on the lots or parcels. The regulatory authority shall have the option of inspecting the open soil exploration pits and monitoring the percolation test procedure. Complete results shall be submitted for review, including all unacceptable test results. Absorption systems are not permitted in areas where the requirements of R317-4-5 cannot be met or where the percolation rate is slower than 60 minutes per inch or faster than one minute per inch. Where soil and other site conditions are clearly unsuitable, there is no need for conducting soil exploration pits or percolation tests.

L. A statement by an engineer, geologist, or other person qualified by training and experience to prepare such statements, must be submitted indicating the present and maximum ground water table throughout the development. If there is evidence that the ground water table ever rises to less than two feet from the bottom of the proposed absorption systems, onsite wastewater absorption systems will not be approved. Ground water table determinations must be made in accordance with R317-4-5.

M. If ground surface slopes exceed four percent, or if soil conditions, drainage channels, ditches, ponds or watercourses are located in or near the project so as to complicate design and location of an onsite wastewater systems, a detailed system layout shall be provided for those lots presenting the greatest design

difficulty. A typical lot layout will include, but not be limited to the following information, and shall be drawn to scale:

1. All critical dimensions and distances for the selected lot(s), including the distance of the onsite wastewater system from lakes, ponds, watercourses, etc.

2. Location of dwelling, with distances from street and property lines.

3. Location of water lines, water supply, onsite wastewater system, property lines, and lot easements.

4. Capacity of septic tank and dimensions and cross-section of absorption system.

5. Results and locations of individual soil exploration pits and percolation tests conducted on the selected lot(s).

6. If nonpublic wells or springs are to be provided, the plan shall show a typical lot layout indicating the relative location of the building, well or spring, and onsite wastewater system.

N. If proposed developments are located in aquifer recharge areas or areas of other particular geologic concern, the regulatory authority may require such additional information relative to ground water movement, or possible subsurface sewage flow.

O. Excessively Permeable Soil and Blow Sand. Soil having excessively high permeability, such as cobbles or gravels with little fines and large voids, affords little filtering action to effluents flowing through it and may constitute grounds for rejection of sites. The extremely fine-grained "blow sand" (aeolian sand) found in some parts of Utah is unsuitable for absorption systems, and onsite wastewater system for installation in such blow sand conditions shall not be approved. This shall not apply to lots which have received final local health department approval prior to the effective date of this rule.

1. Percolation test results in blow sand will generally be rapid, but experience has shown that this soil has a tendency to become sealed with minute organic particles within a short period of time. For lots which are exempt as described above, systems may be constructed in such material provided it is found to be within the required range of percolation rates specified in these rules, and provided further that the required area shall be calculated on the assumption of the minimum acceptable percolation rate (60 minutes per inch for standard trenches, deep wall trenches, and seepage pits, and 30 minutes per inch for absorption beds).

2. Prohibition of Onsite Wastewater Systems. If soil studies described in the foregoing paragraphs indicate conditions which fail in any way to meet the requirements specified herein, the use of onsite wastewater systems in the area of study will be prohibited.

P. After review of all information, plans, and proposals, the regulatory authority will send a letter to the individual who submitted the feasibility report stating the results of the review or the need for additional information. An affirmative statement of

feasibility does not imply that it will be possible to install onsite wastewater systems on all of the proposed lots, but shall mean that such onsite wastewater systems may be installed on the majority of the proposed lots in accordance with minimum State requirements and any conditions that may be imposed.

3.4. Submission, Review, and Approval of Plans for Onsite Wastewater Systems.

A. Plans and specifications for the construction, alteration, extension, or change of use of onsite wastewater systems which receive domestic wastewater, prepared at the owner's expense by or under the supervision of a qualified person such as, a licensed environmental health scientist, or a registered civil, environmental or geotechnical engineer, certified by the regulatory authority, shall be submitted to, and approved by the local health department having jurisdiction before construction of either the onsite wastewater system or building to be served by the onsite wastewater system may begin. Details for said site, plans, and specifications are listed in R317-4-4. After January 1, 2002, the design must be prepared in accordance with certification requirements in R317-11[~~7 and the system designer must, following construction of the system, certify in writing that the system was installed in accordance with the approved plans and specifications~~].

B. Plans and specifications for the construction, alteration, extension, or change of use of onsite wastewater systems which receive nondomestic wastewater shall be submitted to and approved by the Division of Water Quality.

C. The local health department having jurisdiction, or the Division, shall review said plans and specifications as to their adequacy of design for the intended purpose, and shall, if necessary, require such changes as are required by these rules. When the reviewing regulatory authority is satisfied that plans and specifications are adequate for the conditions under which a system is to be installed and used, written approval shall be issued to the individual making the submittal and the plans shall be stamped indicating approval. Construction shall not commence until the plans have been approved by the regulatory authority. The installer shall not deviate from the approved design without the approval of the reviewing regulatory authority.

D. Depending on the individual site and circumstances, or as determined by the local board of health some or all of the following information may be required. Compliance with these rules must be determined by an on-site inspection after construction but before backfilling. Onsite wastewater systems must be constructed and installed in accordance with these rules.

E. In order that approval can be expedited, plans submitted for review must be drawn to scale (1" = 8', 16', etc. but not exceed 1" = 30'), or dimensions indicated. Plans must be prepared in such a manner that the contractor can read and follow them in order to

install the system properly. Plan information that may be required is as follows:

1. Plot or property plan showing:
 - a. Date of application.
 - b. Direction of north.
 - c. Lot size and dimensions.
 - d. Legal description of property if available.
 - e. Ground surface contours (preferably at two-foot intervals) of both the original and final (proposed) grades of the property, or relative elevations using an established bench mark.
 - f. Location and dimensions of paved and unpaved driveways, roadways and parking areas.
 - g. Location and explanation of type of dwelling to be served by an onsite wastewater system.
 - h. Maximum number of bedrooms (including statement of whether a finished or unfinished basement will be provided), or if other than a single family dwelling, the number of occupants expected and the estimated gallons of wastewater generated per day.
 - i. Location and dimensions of the essential components of the onsite wastewater system.
 - j. Location of soil exploration pit(s) and percolation test holes.
 - k. Location of building sewer and water service line to serve dwelling.
1. The location, type, and depth of all existing and proposed nonpublic water supply sources within 200 feet of onsite wastewater systems, and of all existing or proposed public water supply sources within 1500 feet of onsite wastewater systems.
 - m. Distance to nearest public water main and size of main.
 - n. Distance to nearest public sewer, size of sewer, and whether accessible by gravity.
 - o. Location of easements or drainage right-of-ways affecting the property.
 - p. Location of all streams, ditches, watercourses, ponds, subsurface drains, etc., (whether intermittent or year-round) within 100 feet of proposed onsite wastewater system.
2. Statement of soil conditions obtained from soil exploration pit(s) dug (preferably by backhoe) to a depth of ten feet in the absorption system area, or to the ground water table if it is shallower than 10 feet below ground surface. In the event that absorption system excavations will be deeper than six feet, soil exploration pits must extend to a depth of at least four feet below the bottom of the proposed absorption system excavation. One end of each pit should be sloped gently to permit easy entry if necessary. Whenever possible data from published soil studies of the site should also be submitted. Soil logs should be prepared in accordance with the United States Department of Agriculture soil classification system.

3. Statement with supporting evidence indicating (A) present and (B) maximum anticipated ground water table and (C) flooding potential for onsite wastewater system site.

4. The results of at least one stabilized percolation test for the design flow less than 2,000 gallons per day, or three tests if the design flow is more than 2,000 gallons per day, but less than 5,000 gallons per day, in the area of the proposed absorption system, conducted according to R317-4-5. Percolation tests should be conducted at a depth of six inches below the bottom of the proposed absorption system excavation and test results should be submitted on a "Percolation Test Certificate" obtainable upon request. If a deep wall trench or seepage pit is proposed, a completed "Deep Wall Trench Construction Certificate" may be submitted if percolation tests are not required.

5. Relative elevations (using an established bench mark) of the:

- a. Building drain outlet.
- b. The inlet and outlet inverts of the septic tank(s).
- c. The outlet invert of the distribution box (if provided) and the ends or corners of each distribution pipe lateral in the absorption system.
- d. The final ground surface over the absorption system.
- e. Septic tank access cover, including length of extension, if used.

6. Schedule or grade, material, diameter, and minimum slope of building sewer.

7. Septic tank capacity, design (cross sections, etc.), materials, and dimensions. If tank is commercially manufactured, state name and address of manufacturer.

8. Details of drop boxes or distribution boxes (if provided)

9. Absorption system details which include the following:

- a. Schedule or grade, material, and diameter of distribution pipes.
- b. Required and proposed area for absorption system.
- c. Length, slope, and spacing of each distribution pipeline.
- d. Maximum slope across ground surface of absorption system area.
- e. Slope of distribution pipelines (maximum slope four inches/100 feet., level preferred)
- f. Distance of distribution pipes from trees, cut banks, fills or other subsurface disposal systems.
- g. Type and size of filter material to be used (must be clean, free from fines, etc.).
- h. Cross section of absorption system showing:
 - i. Depth and width of absorption system excavation.
 - ii. Depth of distribution pipe.
 - iii. Depth of filter material.
 - iv. Barrier (i.e., synthetic filter fabric, straw, etc.) used

to separate filter material from backfill.

v. Depth of backfill.

10. Schedule or grade, type, and capacity of sewage pump, pump well, discharge line, siphons, siphon chambers, etc., if required as part of the onsite wastewater system.

11. Statement indicating (A) source of water supply for dwelling (whether a well, spring, or public system) and (B) location and (C) distance from onsite wastewater disposal system. If plan approval of a nonpublic water supply system is desired, information regarding that system must be submitted separately.

12. Complete address of dwelling to be served by this onsite wastewater system. Also the name, current address, and telephone number of:

a. The person who will own the proposed onsite wastewater system.

b. The person who will construct and install the onsite wastewater system.

c. If mortgage loan for dwelling is insured or guaranteed by a federal agency, the name and local address of that agency.

F. All applicants requesting plan approval for an onsite wastewater system must submit a sufficient number of copies of the above required information to enable the regulatory authority to retain one copy as a permanent record.

G. Applications will be rejected if proper information is not submitted.

3.5. Final On-Site Inspection.

A. After an onsite wastewater system has been installed and before it is backfilled or used, the entire system shall be inspected by the appropriate regulatory authority to determine compliance with these rules. For deep wall trenches and seepage pits, the regulatory authority should make at least two inspections, with the first inspection being made following the excavation and the second inspection after the trench or pit has been filled with stone or constructed, but before any backfilling has occurred.

B. Each septic tank shall be tested for water tightness before backfilling in accordance with the requirements and procedure outlined in the American Society for Testing Materials' Standard ASTM C-1227, or concrete tanks should be filled 24 hours before the inspection to allow stabilization of the water level. During the inspection there shall be no change in the water level for 30 minutes. Nor shall moving water, into or out of the tank, be visible. The regulatory authority may allow two piece tanks, with the joint below the water level, to be backfilled up to three inches below the joint to provide adequate support to the seam of the tank. Testing shall be supervised by the regulatory authority. Tanks exhibiting obvious defects or leaks shall not be approved unless such deficiencies are repaired to the satisfaction of the regulatory authority.

3.6. Appeals. The appeals process for this rule is outlined in R317-1-8.

KEY: waste water, onsite wastewater systems, alternative onsite wastewater systems, septic tanks

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